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06/13/2006

Klaus Doelle

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TAYLOR & AUST, P.C.
P.O. Box 560
142. S Main Street
Avilla, IN 46710

EXAMINER

CALANDRA, ANTHONY J

ART UNIT

PAPER NUMBER

1791

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/575,541	Applicant(s) DOELLE, KLAUS	
	Examiner ANTHONY J. CALANDRA	Art Unit 1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 April 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 20-47 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 20--47 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 12 April 2006 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>6/13/2006</u> . | 6) <input type="checkbox"/> Other: _____ |

Detailed Office Action

1. The communication dated 4/12/2006 has been entered and fully considered.
2. Claims 20-47 are currently pending.

Drawings

3. The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the incinerator, the gas motor and the gas turbine of claim 45 must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

4. Claims 40 and 41 are objected to because of the following informalities:

‘ph’ should be ‘pH’

Appropriate correction is required.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 25 and 45 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim 25, the phrase "preferably" renders the claim indefinite because it is unclear whether the limitation(s) following the phrase are part of the claimed invention. See MPEP § 2173.05(d).

Claim 45 recites the limitation "incineration plant" in line 1. There is insufficient antecedent basis for this limitation in the claim. Independent claim 44 does not state that an incineration plant is needed.

Further, in regards to claim 45, it is unclear from both the specification and the claim 45 when the claim states ‘the flue gas from an incineration plant is supplied to one of a gas motor and a gas turbine’ whether the flue gas is first supplied to one of a gas motor and a gas turbine and from the gas turbine/motor to the calcium carbonate precipitation process or if flue gas is sent to the gas turbine/motor independently of the flue gas. This may be an idiomatic translation

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error in that the gas motor/turbine is meant to be gas pump (5) of the instant drawings. A 'gas pump' would be referred to as a compressor. Gas can also be 'pumped' by a turbo fan.

Alternatively, the examiner also believes this may be an error in that the applicant meant the flue gas is supplied *from* a gas turbine (a gas turbine). Therefore, the examiner cannot determine the proper meets and bounds of patent protection desired by the applicant. To speed prosecution the examiner has interpreted the claim as '*the flue gas from an incineration plant is supplied to one of a gas motor and a gas turbine and said supplied gas is sent to the fiber loading machine*'. Further examiner has interpreted the gas motor/gas turbine as a air compressor or air fan.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 20-47 are rejected under 35 U.S.C. 102(b) as being anticipated by WO 03/066962

A1 DOELLE, hereinafter DOELLE.

Examiner has used U.S. Publication 2005/0000665 A1 as the English language equivalent. The U.S. patent application is the U.S. continuation of WO 03/066962 A1 (PCT/EP03/01019).

As for claim 20, DOELLE discloses a method for loading fibers with calcium carbonate [abstract]. DOELLE discloses adding CaO or Ca(OH)₂ to the fibrous stock suspension (*adding one of calcium hydroxide, and calcium oxide into the fibrous stock suspension,*

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said calcium hydroxide being in one of a liquid and dry form [0027-0030]). DOELLE further discloses adding flue gas to the suspension (*feeding a flue gas containing carbon dioxide into the fibrous stock suspension [0022]*). The flue gas precipitates out calcium carbonate from the carbon dioxide in the gas into the fiber suspension (*precipitating of the calcium carbonate through said carbon dioxide contained in said flue gas [0027-0030]*). DOELLE discloses that after the precipitation is a tank (34) with agitator which the examiner has interpreted as a device which removes excess gas (*removing superfluous said flue gas after said precipitating step [Figure 1]*). Supporting the examiner's interpretation is instant claim 46 which says a chest with agitator is a deaeration unit. Alternatively, DOEEL further discloses that the pulp is used to make paper. The process of making paper will also deaerate the pulp [0030].

As for claim 21, DOELLE discloses the use of flue gas from boilers or flue gas plants [0022]. The flue gases of these plants will inherently have carbon dioxide by volume in the range of 2-30%. Examiner takes official notice that air contains ~78% nitrogen and ~21% oxygen. As this air is used in a boiler the oxygen will be reduced to CO₂ while the nitrogen will essentially stay the same. Therefore the flue gases will have at most 21% carbon dioxide present.

As for claim 22, DOELLE discloses the refining energy of 0.3 kWh/t – 8 kWh/t which falls within the instant claimed range.

As for claim 23, DOELLE the use of pulp at a consistency of 5 to 40% which is an aqueous consistency [0044].

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As for claims 24, DOELLE discloses that the pulp has a consistency of 5 to 40%, 10 to 35% and 2 to 6% all of which overlap with sufficient specificity to the instant claimed ranges [0044].

As for claim 25, DOELLE discloses the consistency range of 2 to 6% [0050].

As for claim 26, DOELLE discloses a first mixing device (12) a static mixer [0099] for use with mixing the lime/ $\text{Ca}(\text{OH})_2$.

As for claim 27 and 37, DOELLE discloses a first mixing device (12) a static mixer [0099] for use with mixing the lime/ $\text{Ca}(\text{OH})_2$ and a refiner and a disperger [0044].

As for claim 28, DOELLE discloses the consistency range of 10-35% when used in a disperger [0044].

As for claim 29, DOELLE discloses dilution to obtain the correct consistency [0050].

As for claim 30, DOELLE discloses 0.3 – 8 kWh/t of refining energy [0050].

As for claim 31, DOELLE discloses 0.5 – 4kWh/t of refining energy [0050].

As for claim 32, DOELLE discloses the temperature of -15 to 120 deg C [0031].

As for claim 33, DOELLE discloses the temperature of 20 to 90 deg C [0031].

As for claim 34, DOELLE discloses Rhombohedral crystals [0054].

As for claim 35, DOELLE discloses 0.05 to 5 micron crystals [0054].

As for claim 36, DOELLE discloses the range of 0.05 to 2 microns which overlaps with the instant claimed range with sufficient specificity [0054].

As for claims 38 and 39, DOELLE discloses the pressure of 0- to 6 bar [0049].

As for claim 40, DOELLE discloses the pH of 6 to 10 [0050].

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As for claim 41, DOELLE discloses the pH range of 7 to 8.5 which overlaps with the instant claimed range with sufficient specificity [0050].

As for claim 42, DOELLE discloses the time of 0.001 to 1 minute which overlaps with the instant claimed range with sufficient specificity [0053].

As for claim 43, DOELLE discloses the time of 0.1 to 10 seconds which overlaps with the instant claimed range with sufficient specificity [0053].

As for claim 44 and 46, DOELLE discloses an arrangement of machines for loading fibrous stock with calcium carbonate using flue gas [Figure 1 and 0022]. DOELLE further discloses that a chest with an agitator (34) follows the loading process which the examiner has interpreted as capable of removing superfluous flue gas.

As for claim 45, DOELLE discloses the use of flue gas in the fiber loading apparatus [0022]. DOELLE discloses the use of gas pump prior (36) to sending the gas to the disperger/precipitating unit [Figure 1]. The examiner has interpreted a gas pump as a gas turbine. A gas pump such as a compressor or fan pump will have turbine blades inside of it to compress the air.

As for claim 47, DOELLE discloses that after the chest with agitator (34) the loaded is sent to a feed container which the examiner has interpreted as an intermediate container [Figure 1].

Claim Rejections - 35 USC § 103

9. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person

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having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

10. Claims 20-47 are rejected under 35 U.S.C. 103(a) as being unpatentable over WO 03/066962 A1 DOELLE, hereinafter DOELLE, in view of, if necessary, Handbook for Pulp and Paper Technologists by SMOOK, hereinafter SMOOK.

Examiner has used U.S. Publication 2005/0000665 A1 as the English language equivalent. The U.S. patent application is the U.S. continuation of WO 03/066962 A1 (PCT/EP03/01019).

As for claim 20 and 44, DOELLE discloses the limitations of the instant claim as disclosed above. Examiner has interpretation of the tank with agitator as removing superfluous air. Examiner also interpreted the paper making process as removing air. Should the applicant successfully argue against these interpretations than the removal of superfluous air would be obvious in view of SMOOK.

SMOOK discloses that prior to paper making a deaeration unit should be located prior to the paper machine [pg. 230-231 and Figure 16-6]. At the time of the invention it would have been obvious to use the deaerator of SMOOK in the process/apparatus of DOELLE. A person of ordinary skill in the art would be clearly motivated to do so to prevent blemishes on the sheet, poor drainage, and system instability [SMOOK pg. 230].

The limitations of claims 21-43, 45 are found in DOELLE as discloses above.

As for claim 46, SMOOK discloses that the deaerator is a cyclonic device [pg. 231 Figure 16-6].

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As for claim 47, SMOOK discloses that subsequent to the deaerator is a headbox which the examiner has interpreted as an intermediate holding tank [pg. 231 Figure 16-7].

Conclusion

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to ANTHONY J. CALANDRA whose telephone number is (571) 270-5124. The examiner can normally be reached on Monday through Thursday, 7:30 AM-5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steven Griffin can be reached on (571) 272-1189. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

AJC

//José A Fortuna//

Primary Examiner, Art Unit 1791

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